Inside Wallops

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World's Most Precise Gyroscopes Ready to Test Einstein Theory

A NASA spacecraft designed to test Albert Einstein's general theory of relativity is set to launch from Vandenberg Air Force Base, Calif., at 1:09 p.m. EDT, April 17.

NASA's Gravity Probe B mission, (GP-B), will use four gyroscopes, orbiting the Earth in a satellite, to test two predictions of Einstein's 1916 theory that space and time are distorted by the presence of massive objects. The two effects being tested are: The geodetic effect, the amount by which the Earth warps local spacetime in which it resides, and the frame-dragging effect, the amount by which the Earth drags local spacetime around with it as it rotates.

NASA Wallops Flight Facility Photo

A Scout D sounding rocket lifts off from Wallops Island on June 18, 1976, carrying the GP-A experiment.

"Gravity Probe-B has the potential to uncover fundamental properties of the invisible universe, a universe which seems very bizarre and alien to our everyday perceptions yet one that Einstein tried to show us almost a century ago," said Dr. Anne Kinney, director of the Astronomy and Physics Division in NASA's Office of Space Science.

The predecessor to GP-B, Gravity Probe A (GP-A), was launched on June 18, 1976, on a four stage Scout D sounding rocket at 7:41 a.m. Eastern Daylight Time from Wallops Island.

The experiment, known as Gravity Probe A or the Red Shift Experiment, was a joint program of NASA Marshall Space Flight Center and the Astrophysical Observatory of the Smithsonian Institution. The clock-carrying space probe was the first test in space to explore the structure of space and time.

The rocket-borne clock, an extremely accurate hydrogen maser atomic clock, was compared by telemetry to an identical reference clock at the Merritt Island Launch Area, NASA Kennedy Space Flight Center.

GP-A was only in space for one hour and 55 minutes in an elliptical flight trajectory over the Atlantic. It attained a maximum height of 6200 miles above Earth before impacting into the Atlantic Ocean.

Why was GP-A in space for such a short time? No accidents on the launch pad - it was part of the design of the experiment (unlike GP-B, which will be in a polar orbit over the Pacific Northwest for nearly two years). To yield an accurate and inexpensive experiment, GP-A required a flight path with a large change in the gravitational potential to provide a large gravitational redshift, and it required a flight path that kept the flight Hydrogen MASER in contact with the ground Hydrogen MASER during data collection.

Once placed in its polar orbit of 400 miles above Earth, GP-B will circle the globe every 97.5 minutes, crossing over both poles. In-orbit checkout and calibration is scheduled to last 40-60 days.

NASA's Marshall Space Flight Center manages the GP-B program.

Stanford University is responsible for the design and integration of the science instrument, as well as for mission operations and data analysis.

Lockheed Martin designed, integrated and tested the spacecraft and some of its major payload components.

NASA's Kennedy Space Center and Boeing Expendable Launch Systems, Huntington Beach, Calif., are responsible for the countdown and launch of the Delta rocket.

Wallops Shorts……

In the News

SpaceNews
Commentary, Editorial "Time for a BRAC"

Congratulations to Our Newest Retirees

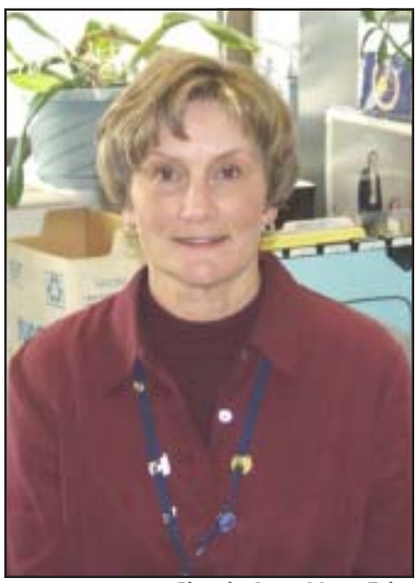

Photo by James Mason-Foley

Ann McDowell, above, retired from NASA Wallops Flight Facility effective March 31 with over 37 years of government service. McDowell was a resource analyst in the Administration and Resources Management Office (Code 903).

Photo by Lee Wingfield

Doug Young, (above) retired from NASA Wallops Flight Facility effective April 3. Young began his government career on July 6, 1967, and retired as an aeronautical engineer in the Aircraft Office, (Code 830).

Accomack County Students Intern at Wallops

As part of Accomack County Schools Internship Program, three Arcadia High School seniors are spending several hours during the spring semester working along side Wallops employees.

Internships are designed for seniors who have a clear career path planned and who desire hands-on experience under guidance of someone currently working in that field or a field related to their career choice. Prior to selection for participation in the program, students are required to meet with an Internship Screening Committee to ensure that the proposed internship will be an asset for the students. The student must provide valid reasons as to how the internship will expand their career preparation.

Once selected for the program, students must report to work with their assigned mentor and accumulate 135 supervised hours working at the approved intern site. Interns are required to dress and display social skills appropriate for the work environment. Students provide their own transportation and are required to keep a daily log of events. At the end of the semester they must write a three to five page paper and give a brief presentation describing their experience. The internship is taken for a grade and is averaged in the student's grade point average.

Arcadia High School students participating in the program this semester are: Melissa Waterfield, Harold White Jr., and Chris Perry.

Janie Penn, NASA Aircraft Office, is serving as mentor to Melissa Waterfield. "All of the things I could reap from the people working at this internship may expand my horizons. Since they have been in this position before, they would be able to help me make some decisions," said Waterfield.

Harold White felt the internship would be a great experience. According to White, "Learning about computers has been a passion of mine for most of my life." Peggy Jester, Raytheon, is White's mentor.

Chris Perry wants to pursue a career as an architect. "I don't want to just build things, I want to design them and learn how real-life situations affect a project," said Perry. Tom Wilson, NASA Facilities Management Branch is his mentor. Perry is working with the Engineering and Planning Group and the Construction Management Group.

Hunting Easter Eggs

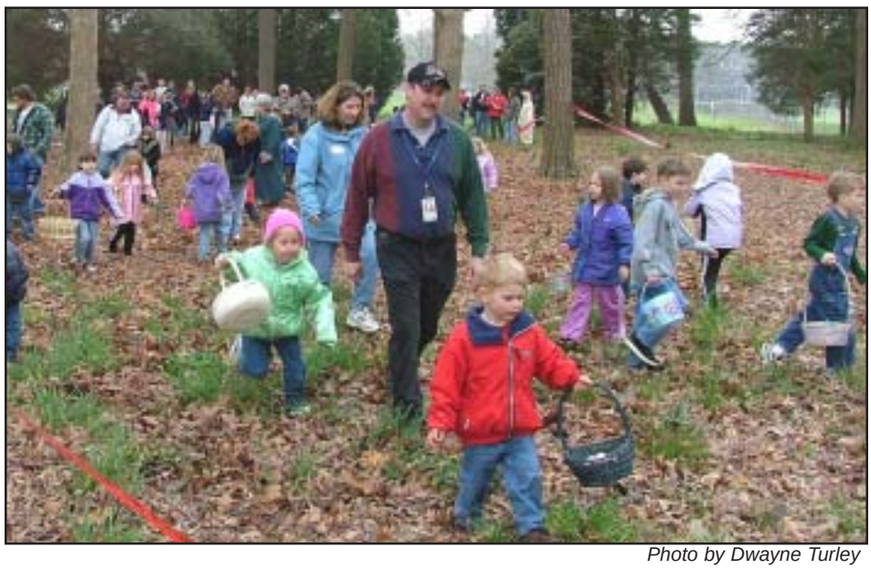

Photo by Dwayne Turley

Despite the gloomy weather, the Wallops Easter Egg Hunt held last Saturday, April 3, was a huge success. A grand time was had by the close to 200 attendees. Prizes were distributed to egg hunters who accumulated the most, second most, and least amount of eggs. Many of the eggs contained prize slips, and there was also a coloring contest.

A special note of appreciation is extended to "The Easter Bunny" (Kaitlyn Murphy), and her helpers: Dawna Marr, Ernie Smith, Rob Mullis, and Dwayne Turley.

Hello Spring After a Mild, Windy March

by Bob Steiner, Meteorologist

March ended on a cool, wet note, but the average temperature for the month of 46.5 degrees was 1.9 degrees warmer than the monthly average of 44.6. The maximum temperature of 74 degrees was achieved on two days in March, once on the 4th and again on the 27th. The coolest morning was the 23rd with a reading of 22 degrees. No record temperatures were set or tied.

Even though we experienced 11 days with measurable precipitation during March, (10 days is normal), the total of 2.11 inches was 1.83 inches below normal. The greatest 24 hour total was on the March 16 with 0.54 inches being recorded. No measurable snow fell during the month.

Winds of 29 mph or greater were recorded on 13 days. On two separate days, March 6 and 21, 41 mph gusts were recorded.

"April showers do indeed bring May flowers"- May brings warmer temperatures with daily highs starting out in the mid 60's and increase to the mid to upper 70's by the end of the month. Overnight minimum temperatures start near 50 degrees and warm to about 60 on May 31. The maximum recorded high in May is 97 degrees recorded May 31, 1991. The extreme low for the month is a reading of 34 degrees on May 8, 1974.

Measurable rain normally falls on 10 days during May with an average total for the month of 3.20 inches.

New Alternative Work Schedule Implementation Training

The Goddard Space Flight Center is implementing a new Alternative Work Schedule starting April 18, 2004. Maxiflex offers a wide range of alternatives in which work schedules can be established.

Training is not mandatory but supervisors and employees are strongly encouraged to attend to learn about the recent changes.

Supervisor session:
April 13 9:30 -11:30 a.m.
Building E-2 Training Room

Employee session:
April 13 1 - 2:30 p.m.
Building E-2 Training Room

To register contact Pat Dworske on ext. 2394 or by email:
Patricia.J.Dworske@nasa.gov
Training requests are not required.

Job Opening General Manager/Bookkeeper Wallops Exchange and Morale Association

Oversight and management of food service, lodging, retail and lounge facilities. Perform all bookkeeping functions. Send resume to the WEMA Office, Building E-105.

Inside Wallops is an official publication of Goddard Space Flight Center and is published by the Wallops Office of Public Affairs, Extension 1584, in the interest of Wallops employees. Recent and past issues of *Inside Wallops* may be found on the NASA Wallops Flight Facility homepage: www.wff.nasa.gov

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